

Name Key  
Mrs. Roumbos

Date \_\_\_\_\_  
8R Period \_\_\_\_\_

Systems Word Problems  
Homework

1) A potter sells each vase for the same amount and each mug for the same amount. One day she sells 4 vases and 3 mugs for \$80. Another day she sells 3 vases and 6 mugs for \$90. How much does she charge for each vase  $v$ ? How much does she charge for each mug,  $m$ ?

$x$  = cost of 1 vase  
 $y$  = cost of 1 mug

	$\epsilon$	$\$$	$C$
$\begin{aligned} 3(4x + 3y) &= 80 \\ -4(3x + 6y) &= -90 \end{aligned}$ $\begin{aligned} 12x + 9y &= 240 \\ -12x - 24y &= -360 \\ \hline -15y &= -120 \\ -15 & \quad -15 \\ \hline y &= 8 \end{aligned}$ $\begin{aligned} 4x + 3y &= 80 \\ 4x + 3(8) &= 80 \\ 4x + 24 &= 80 \\ \underline{-24} \quad -24 & \\ 4x &= 56 \\ \underline{4} \quad 4 & \\ x &= 14 \end{aligned}$		One vase costs \$14 one mug costs \$8	$\begin{aligned} 4(14) &= 56 \\ 3(8) &= 24 \\ \hline &= 80 \end{aligned}$ $\begin{aligned} 3(14) &= 42 \\ 6(8) &= 48 \\ \hline &= 90 \end{aligned}$

- A) It costs \$26 for 3 bags of small beads and 4 bags of large beads. It costs \$20 for 5 bags of small beads and 2 bags of large beads. Which system of equations can be used to find the cost of each size bag?
- A  $\begin{cases} 3x + 5y = 20 \\ 4x + 2y = 26 \end{cases}$     C  $\begin{cases} 3x + 4y = 20 \\ 5x + 2y = 26 \end{cases}$
- B  $\begin{cases} 3x + 5y = 26 \\ 4x + 2y = 20 \end{cases}$     **D**  $\begin{cases} 3x + 4y = 26 \\ 5x + 2y = 20 \end{cases}$

- B) A quiz has 26 questions and is worth 100 points. Some questions are worth 2 points. The rest are worth 5 points. Which system of equations can be used to find the number of each type of question?
- A**  $\begin{cases} x + y = 26 \\ 2x + 5y = 100 \end{cases}$     C  $\begin{cases} x + 2y = 26 \\ x + 5y = 100 \end{cases}$
- B  $\begin{cases} x + y = 100 \\ 2x + 5y = 26 \end{cases}$     D  $\begin{cases} 2x + 2y = 26 \\ 5x + 5y = 100 \end{cases}$